

AMENDMENTS TO THE SPECIFICATION

IN THE ABSTRACT OF THE DISCLOSURE:

Replace the Abstract of the Disclosure currently of record with the attached new Abstract of the Disclosure.

ABSTRACT OF THE DISCLOSURE

A liquid dispensing apparatus, including includes a container for containing a liquid; a liquid, a container setting part for setting the container; and container, a dispensing mechanism part having a pipette for drawing and dispensing the liquid, a raising/lowering part for raising and lowering the pipette, a base for holding the raising/lowering part and provided with a projecting part, and a base driving part for moving the base.

—A lid being capable of being opened/closed with an opening/closing pivot part is coupled to the container, and the lid is provided with a hook part projecting upward from the lid for engaging engaging with the projecting part, and the base is provided with a projection part for engaging, which opens the lid by abutting against the hook part and moving the hook part toward the pivot part side of the container as the base moves relatively to the container and retains the state of the lid opened.

IN THE SPECIFICATION:

The specification has been amended as follows:

Page 1

The subheading at line 14 has been amended as follows:

Prior Description of Related Art

Page 2

The paragraph at lines 6-13 has been amended as follows:

Thus, when reagent containers and specimen containers are left set at these analyzers for a long period of time, evaporation/drying and mixing of dust cause deterioration of reagents or contamination of specimens and adversely affect the results of the analysis. So, to enhance the stability in storage, an opening of a container has been reduced in size or a container holding part has been kept cool. However, it is difficult to prevent the deterioration of reagents and specimens by only these means.

The paragraph at lines 14-17 has been amended as follows:

~~And se~~Consequently, there are presented an apparatus provided with a mechanism for automatically closing an opening of a reagent container with a lid except when drawing a reagent to prevent the deterioration of the reagent.

Page 3

The paragraph at lines 7-15 has been amended as follows:

In the apparatus of a conventional type described in above group (a), the mechanism part for blocking the opening of the container has to be configured to correspond to the container and therefore the constitution of the apparatus subjects to constraints. And, when reagents adhere to the member blocking the opening, contamination of a reagent to be used next may arise. Further, since the container and the lid are separated, it is required to attach and detach the lid before and after measuring and to preserve the lid at another location during measuring, and therefore it ~~requires the manpower~~requires manpower.

Pages 3-4

The paragraph beginning on page 3, line 16 and ending on page 4, line 2 has been amended as follows:

In the apparatus of a conventional type described in ~~above-in the above~~ group (b), to solve this problem, a lid is coupled to a reagent container. However, the automatic analyzer requires the rotation mechanism and a driving mechanism for letting the rotation mechanism catch the lid of the reagent container. Therefore, the constitution and

operational controls of these mechanisms becomes complicated, and incorporating such complex mechanisms particularly into the automatic analyzer causes upsizing of the apparatus and lowering of the speed of the treatment due to the complexity of operational controls. Furthermore, since the lid of the reagent container needs to be configured to retain a state of the lid of the reagent container opened after being opened by the rotation mechanism, the constitution is limited.

Page 5

The paragraph at lines 8-10 has been amended as follows:

Furthermore, an automatic analyzing apparatus of the invention ~~is characterized by including~~may include the liquid dispensing apparatus described above.

The paragraph at lines 13-25 has been amended as follows:

Figure 1 is a perspective view showing an essential part of an automatic analyzing apparatus according to an embodiment of the present ~~invention.~~invention;

The paragraph at lines 16-18 has been amended as follows:

Figure 2 is a block diagram showing the essential part of the automatic analyzing apparatus according to the embodiment of the present ~~invention.~~invention;

The paragraph at lines 19-20 has been amended as follows:

Figure 3 is a perspective view of an example of the reagent unit used in the present ~~invention.~~invention;

The paragraph at lines 21-22 has been amended as follows:

Figure 4 is a perspective exploded view of the example of the reagent unit used in the present ~~invention.~~invention;

The paragraph at lines 23-24 has been amended as follows:

Figure 5 is a perspective view of a container, of which a lid is closed, used in the present ~~invention.~~invention;

Pages 5-6

The paragraph beginning on page 5, line 25 and ending on page 6, line 1 has been amended as follows:

Figure 6 is a perspective view of the container, of which the lid is opened, used in the present ~~invention.~~invention;

Page 6

The paragraph at lines 2-3 has been amended as follows:

Figure 7 is a view showing an opening/closing motion of the lid of the container in the embodiment of the ~~invention.~~present invention; and

The subheading at line 7 has been amended as follows:

Detailed Description of the Preferred Embodiment Present Invention

The paragraph at lines 8-14 has been amended as follows:

~~The container A contained used in the present invention for containing the liquid liquid~~ is a specimen container and/or a reagent container. The container has an opening at ~~the upper an upper~~ portion, ~~a lid being and a lid~~ capable of being opened/closed with an opening/closing pivot part is coupled to the container. The lid is configured so as to block the opening of the container. Preferably, the lid is configured so as to have a construction which may seal the container.

The paragraph at lines 15-19 has been amended as follows:

The container setting part in the present invention ~~means a—is a~~ portion at which a rack for holding one or more specimen containers is placed, a portion to which specimen containers are transferred by a transfer apparatus ~~and apparatus, and~~ a portion at which reagent containers are placed. A movable container setting part ~~also is may also be~~ used as required.

Pages 6-7

The paragraph beginning on page 6, line 20 and ending on page 7, line 7 has been amended as follows:

It is preferred that the pipette in the present invention has a pipette body and a liquid metering means provided to the pipette ~~body suchbody, such as a syringe or a pump and pump,~~ and operates as follows in, for example, the automatic analyzing apparatus. That is, when the pipette body is inserted into the specimen container or the reagent container from which the liquid is ~~drawn and drawn~~, the liquid metering means connected to the pipette body starts ~~drawing and drawing~~ liquid and takes a definite amount of the specimen or the reagent ~~separately, and then when these~~ separately. When the pipette body is ~~moved toward~~ moved toward a reaction vessel to which the specimen or the reagent is to be discharged and inserted into the reaction vessel, the liquid metering means starts discharging and dispenses a predetermined amount of the specimen or the reagent.

Page 7

The paragraph at lines 10-11 has been amended as follows:

The pipette body ~~washed thus~~ is relatively moved again among the specimen container, the reagent ~~container and~~ container, and the reaction vessel.

The paragraph at lines 12-16 has been amended as follows:

It is preferred that the raising/lowering part in the present invention may move the pipette vertically precisely in a vertical direction by a drive of a belt looped over pulleys or a ball screw. It is preferred that the base driving part in the present invention may move the base horizontally precisely in a horizontal direction by a drive of a belt looped over pulleys or a ball screw.

The paragraph at lines 17-24 has been amended as follows:

The hook part formed on the lid ~~means~~ lid is a part projecting ~~outward~~ projecting outward and upward from the lid. And, ~~to retain~~ To retain the state of the lid opened, a part in a valley form, which is V-shaped or U-shaped as viewed from the pivot part side of the lid, is formed between the hook part and the lid. Therefore, preferably, the hook part is formed so as to project from a location on a side of the

pivot part. A shape of the hook part is selected as appropriate so as to correspond to a shape of the projection part of the dispensing mechanism part.

Pages 8-9

The paragraph beginning on page 8, line 16 and ending on page 9, line 6 has been amended as follows:

The projection part provided at the base of the dispensing mechanism part in the present invention is a portion which may open the lid by making the hook part of the lid ~~abut~~on~~abut~~ against the projection part from the reverse side of the pivot part of the lid with the relative movement of the base to the container and by pressing the hook part of the lid through moving the base toward the pivot part side of the lid and retain the state of the lid opened through entering between the lid and the hook part of the lid. When the shape of the projection part is ~~selected as~~selected so as to be adapted to the lid and the hook part of the lid, it is acceptable only to provide the base with a mere protrusion as illustrated in Figure 8. Or, when the projection part is configured so as to ~~retract usually~~usually retract and project only when required, a degree of flexibility in an arrangement and a constitution of the dispensing mechanism part and the

reagent container are enhanced. For instance, it is possible to reciprocate a piston up and down as the projection part using an air cylinder or a solenoid.

Page 9

The paragraph at lines 9-14 has been amended as follows:

~~Thereinafter, using now~~ Hereinafter, by referring to the drawings, ~~there is illustrated~~ an embodiment of the present invention will be described. Figure 1 is a perspective view showing an essential part of an automatic analyzing apparatus in accordance with the embodiment of the invention. A basic constitution of a reaction system and a measuring system are the same as the previously as a previously known apparatus.

The paragraph at lines 15-21 has been amended as follows:

An automatic analyzing apparatus 10 is mainly composed of a dispensing mechanism part 12, a specimen setting part 14, a reagent setting part 16, a reaction vessel setting part ~~18~~ and 18, and a measuring part 20. The dispensing mechanism part 12 ~~is composed~~ is composed of a raising/lowering part 26 provided at a base 22 and raising /lowering a pipette 24 and a base driving part 28 moving the base 22 in two directions of X and Y axes.

Page 10

The paragraph at lines 3-8 has been amended as follows:

The raising/lowering part 26 includes a pair of pulleys 32, 34 provided in vertically-spaced relationship at a base 22, a motor 35 rotating /driving ~~one 32 of one of~~ these pulleys 32, 34 and a belt 36 looped over these pulleys 32, 34 between them, and the holder 30 of the pipette 24 is secured to the belt 36 and thereby the raising/lowering part 26 is configured.

The paragraph at lines 13-21 has been amended as follows:

Figure 2 is a block diagram of an essential part of the automatic analyzing apparatus 10. Reference numeral 42 indicates a control part including a microcomputer having a CPU, a ROM, a RAM, a timer and a counter and the like. The raising /lowering part 26 of the pipette 24, the liquid metering part 31, the base driving part 28, the air cylinder 40 being a driving source of the piston ~~38 and 38,~~ and various kinds of positioning sensors are connected to the control part ~~42 and further~~. Further a key-in-capable control panel 44 and a ~~output and an output~~ part 46 displaying the measurements are connected the control part 42.

Pages 10-11

The paragraph beginning on page 10, line 22 and ending on page 11, line 3 has been amended as follows:

Figure 3 and Figure 4 are a perspective view and a perspective exploded view, respectively, of a reagent unit 60 used in the present invention, consisting of a plurality of reagent containers 50, ~~56 and 58.~~56, and 58. The lids 52 of reagent containers 50, 56 and 58 have ~~constitution being capable of being~~ adapted to be opened/closed, in which the lid 52 rotates ~~through about~~ a pivot part 54 of a lid-support member 53 attached to a container body 51. A hook part 55 is provided on the top face of the lid 52.

The paragraph at lines 7-19 has been amended as follows:

The lid-support member 53 of the reagent container 50 is provided with engaging parts 62, 64 so as to be coupled to lid-support members 53 of adjacent reagent containers 56, 58. By connecting more than one reagent containers 50, 56, 58 to each other to form the reagent unit 60 and holding the reagent unit 60 at the reagent setting part 16, the direction of the opening/closing of the lid 52 of respective containers is specified. Further, the lid 52 is configured to close tightly an opening 59 of the container body 51 by being pressed

against the container body 51. ~~And, the Further, the~~ reagent unit 60 is preserved in this condition in a refrigerator. When the reagent unit is set at the liquid dispensing apparatus, the state of being closed tightly is released manually, and openings 59 of container bodies are left closed under the lids 52 own weight.

Pages 11-12

The paragraph beginning on page 11, line 22 and ending on page 12, line 2 has been amended as follows:

First, the base 22 is moved to the specimen setting part 14 by the base driving part 28, and the pipette 24 is lowered to draw the ~~specimen of~~ specimen in the specimen container ~~in~~ specified amount by a specified amount. Then, the pipette 24 is raised, and the base 22 is moved laterally to a reaction vessel setting part 18, and the pipette 24 is lowered to dispense the ~~specimen drawn~~ drawn specimen.

Page 12

The paragraph at lines 3-5 has been amended as follows:

Next, referring to Figures 7(a) to 7(f), motion of drawing in the reagent is described. Figure 7 is a ~~drawing for illustrating~~ drawing illustrating the motion of the opening/closing of the lid.

The paragraph at lines 6-9 has been amended as follows:

(a) The base 22 is moved laterally toward the reagent setting part 16 ~~(it is a move in~~ (movement towards the left direction in the drawing). The piston 38 of the air cylinder 40 is projected before the base 22 reaches the reagent setting part 16.

The paragraph at lines 10-14 has been amended as follows:

(b) As the base 22 is moved laterally in the left direction, the projection part 38 abuts against the hook part 55 of the reagent container 50 and moves the hook part 55 in the left direction, and thereby the projection part 38 rotates the lid ~~52 counterclockwise around~~ 52 in counterclockwise direction about the pivot part 54 to open the lid 52.

Pages 12-13

The paragraph beginning on page 12, line 23 and ending on page 13, line 2 has been amended as follows:

(e) As the base 22 is moved ~~laterally in the right direction~~ laterally to the right, the projection part 38 abuts against the top face of the lid 52 of the reagent container 50 and moves the top face ~~in the right direction to the right~~, and thereby the projection part 38 rotates the lid ~~52 clockwise~~

~~around 52~~ in a clockwise direction about the pivot part 54 to close the lid 52.

Page 13

The paragraph at lines 3-5 has been amended as follows:

(f) Then, the piston 38 of the air cylinder 40 is retracted. The base 22 is moved to the reaction vessel setting part 18 and the ~~reagent drawn~~ drawn reagent in is dispensed into the specimen.

The paragraph at lines 6-9 has been amended as follows:

Up to this point, the example in which the projection part extends and retracts has been described but the projection part may be a rodlike member 66 which does not extend and retract as illustrated Figure 8. ~~A basic function is~~ Basic functions of the rodlike member 66 are the same.

The paragraph at lines 10-16 has been amended as follows:

The automatic analyzing apparatus used in the present invention is that in which a projection part is added to the base of the conventional dispensing mechanism part and a hook part is added to the lid of the conventional container and allows the lid to be opened and closed with a simple constitution. ~~And, since~~Since it is not particularly required

to change the operations of dispensing, it is easy to control the operations and there is ~~not the possibility~~ no possibility of lowering the speed of the treatment.

Pages 13-14

The paragraph beginning on page 13, line 20 and ending on page 14, line 8 has been amended as follows:

Furthermore, in the foregoing embodiment, the reagent container has a constitution in which the reagent container closes tightly by pressing the lid against the opening of the container. So, in ~~Figure 4(e)~~ Figure 7(e), when the projection part 38 is controlled so as to press the lid downward after the lid 52 is rotated clockwise ~~to be closed~~ such that the lid 52 is closed by the movement of the projection part 38 accompanying the lateral movement of the base 22, it is possible to automatically close tightly the reagent container. It is possible to further prevent drying and deteriorating of the reagent by conducting such a control at the end of measuring operations. Further, the projection part 38 may also be configured in such a way that the lid 52 is released from the state of being closed tightly and ~~rotated~~ counterclockwise ~~rotated counterclockwise~~ to be opened by the

Appl. No. 09/820,684
Reply dated November 24, 2003
Reply to O.A. of August 29, 2003

movement of the projection part 38 accompanying the lateral movement of the base 22 in restarting the measurement.

Page 14

Lines 16-25 have been deleted in their entirety.

Page 15

Lines 1-5 have been deleted in their entirety.